



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,466	04/13/2004	David Mills	DKT 03047A (BWI-00085)	4606
7590	11/21/2006			EXAMINER LEE, CLOUD K
BorgWarner Inc. Patent Administrator 3850 Hamlin Road Auburn Hills, MI 48326-2872			ART UNIT 3753	PAPER NUMBER

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/823,466	MILLS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Cloud K. Lee	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on 06 September 2006.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 1-13, 15-24, 26-33 and 35-37 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 26-33 and 37 is/are allowed.  
 6) Claim(s) 1-5, 7-13, 15, 16 and 18-24 is/are rejected.  
 7) Claim(s) 6, 17, 35 and 36 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 03 October 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 9/7/04.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 7-8 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuller et al (US Patent No. 5,795,038).

Fuller et al disclose a solenoid control valve comprising a fluid control body (116, 138 and 144) for being received in a fluid housing, the fluid control body including a central cavity (see figure 4, where 116 is positioned), having a pressure supply passage (142), a feed supply tube (114) having an outer diameter positioned in the central cavity, including an inner bore (104) operably connected to the pressure supply passage, feed supply tube being supported in the central cavity of the fluid control body by way of a radially and axially extending wall, the wall having a plurality of longitudinally extending flow chambers (136) in communication with the pressure control passage, the feed supply tube including a valve receiving area (the housing itself is the valve receiving area), a valve seat portion being made of a metallic material and press fit into the valve receiving area (the valve member 116 is press fit (inserted) into the valve receiving area, see figure 4), the valve seat portion including a valve seat (106) and a passage in communication between the valve seat and the pressure control passage, a valve contained in the valve receiving area operable to selectively close off communication between the pressure supply passage and the pressure control passage, a solenoid (40) for opening the valve in

response to a signal, a passageway (136) extending through the feed supply tube and the plurality of the longitudinally extending flow chambers are operably connected at a first end to the passage and passageway and at a second end to the pressure control passage (see figure 4), the valve is a ball valve (130), wherein the fluid control body has an upper radially extending lip member (between 140 and 112).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2-5, 9-11, 15-16, 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller et al in view of Ward et al (US Patent No. 6,489,870).

Fuller et al fail to disclose the solenoid includes a coil having radially stepped radial inner diameters.

Ward et al disclose the solenoid includes a coil having radially stepped radial inner diameters (see figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the solenoid includes a coil having radially stepped radial inner diameters in order to increase magnetic attractive force as taught by Ward et al (see Col 7 lines 55- Col 8 lines 6).

Fuller et al disclose a portion of said casing member extending into the stepped portion of the coil for forming a flux tube therein (see figure 4), an armature (124) axially movable within the bobbin (127), a pole piece assembly adjacent the armature and interposed between the bobbin and the fluid control body (the upper portion of the 116 is the pole piece assembly), a stamped flux washer member (164), a press-fit valve seat member (116 is press-fit into the valve receiving area), wherein a cage (122) is formed for retaining the armature therein.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller et al (US Patent No. 5,795,038) in view of Rusnak (US Patent No. 4,530,486).

Fuller et al fail to disclose the fluid control body is made of a polymer material.

Rusnak disclose the fluid control body is made of a polymer material (see figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was

made to provide the fluid control body is made of a polymer material in order to provide an acceptable seal as taught by Rusnak (see abstract).

***Allowable Subject Matter***

5. Claims 6, 17 and 35-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 26-33 and 37 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art of record does not disclose or suggest a control rod extending along said central axis and through said pole piece assembly for opening of said valve, said control rod including a tapered end in combination with the other limitations set forth in claim 1.

The prior art of record does not disclose or suggest a control rod extending along said central axis and through said pole piece assembly for opening of said valve, said control rod including a tapered end in combination with the other limitations set forth in claim 15.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

6. Applicant's arguments with respect to claims 1, 15 and 26 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cloud K. Lee whose telephone number is (571)272-7206. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on (571)272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CL



ERIC KEASEL  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700